



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE  
GOVERNOR

PATRICIA W. AHO  
COMMISSIONER

**Southern Maine Health Care  
York County  
Sanford, Maine  
A-71-71-I-M (SM)**

**Departmental  
Findings of Fact and Order  
Air Emission License  
Amendment #1**

**FINDINGS OF FACT**

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

**I. REGISTRATION**

**A. Introduction**

Southern Maine Health Care at the Sanford Campus (SMHC-Sanford) was issued Air Emission License A-71-71-H-T on November 4, 2014, permitting the transfer of license A-71-71-G-R/M from Henrietta D. Goodall Hospital, Inc. to SMHC-Sanford. Air Emission License A-71-71-G-R/M permits the operation of emission sources associated with their healthcare facility.

SMHC-Sanford has requested a minor revision to their license in order to reflect the addition of distillate fuel as a back-up fuel source for the boilers.

The equipment addressed in this license is located at 25 June Street in Sanford, Maine.

**B. Emission Equipment**

The following equipment is addressed in this air emission license:

**Boilers**

<b><u>Equipment</u></b>	<b><u>Maximum Capacity</u></b>	<b><u>Maximum Firing Rate</u></b>	<b><u>Fuel Type, % sulfur</u></b>	<b><u>Date of Manuf.</u></b>	<b><u>Stack No.</u></b>
Boiler #1	6.3 MMBtu/hr	42.0 gal/hr	#4 Fuel oil, 0.5% S	1964	#1
			Distillate fuel, 0.0015% S		
Boiler #2	6.3 MMBtu/hr	42.0 gal/hr	#4 Fuel oil, 0.5% S	1964	#1
			Distillate fuel, 0.0015% S		
Boiler #3	2.5 MMBtu/hr	16.7 gal/hr	#4 Fuel oil, 0.5% S	1983	#1
			Distillate fuel, 0.0015% S		

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD, SUITE 6  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

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312 CANCO ROAD  
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PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769  
(207) 764-0477 FAX: (207) 760-3143

C. Application Classification

This amendment will not increase emissions of any pollutant. Therefore, this amendment is determined to be a minor revision and has been processed as such. With the annual fuel limit on boilers and the operating hours restriction on the emergency generators, the facility is licensed below the major source thresholds for criteria pollutants and hazardous air pollutants (HAP) and is considered both a synthetic minor and an area source of HAP.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Boilers #1, #2, and #3

Boilers #1, #2, and #3 are capable of firing distillate fuel in addition to #4 fuel oil. The distillate fuel will be used as an emergency back-up fuel and will be drawn from the same tank(s) that feed the generators.

1. BACT/BPT Findings

The BACT/BPT emission limits for the boiler were based on the following:

#4 Fuel Oil

- PM/PM<sub>10</sub> – (i) 0.2 lb/MMBtu for Boilers #1 and #2 based on 06-096 CMR 103  
(ii) 0.12 lb/MMBtu for Boiler #3 based on 06-096 CMR 103  
SO<sub>2</sub> – 0.5 lb/MMBtu based on firing #4 fuel oil with 0.5% sulfur by weight  
NO<sub>x</sub> – 0.3 lb/MMBtu based on data from similar #4 fuel oil fired boilers of this size and age  
CO – 5 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10  
VOC – 0.34 lb/1000 gal based on AP-42, Table 1.3-3, dated 5/10  
Opacity – 06-096 CMR 101

Distillate Fuel

- PM/PM<sub>10</sub> – (i) 0.2 lb/MMBtu for Boilers #1 and #2 based on 06-096 CMR 103  
(ii) 0.12 lb/MMBtu for Boiler #3 based on 06-096 CMR 103  
SO<sub>2</sub> – Combustion of distillate fuel with a maximum sulfur content not to exceed 15 ppm (0.0015% sulfur by weight)  
NO<sub>x</sub> – 20 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10  
CO – 5 lb/1000 gal based on AP-42, Table 1.3-1, dated 5/10  
VOC – 0.34 lb/1000 gal based on AP-42, Table 1.3-3, dated 5/10  
Opacity – 06-096 CMR 101

The BACT/BPT emission limits for Boilers #1, #2, and #3 are the following:

<u>Units</u>	<u>Pollutant</u>	<u>lb/MMBtu</u>	<u>Origin and Authority</u>
Boiler #1	PM	0.20	06-096 CMR 103, Section (2)(A)(1)
Boiler #2	PM	0.20	06-096 CMR 103, Section (2)(A)(1)

<u>Units</u>	<u>Fuel Type</u>	<u>PM (lb/hr)</u>	<u>PM<sub>10</sub> (lb/hr)</u>	<u>SO<sub>2</sub> (lb/hr)</u>	<u>NO<sub>x</sub> (lb/hr)</u>	<u>CO (lb/hr)</u>	<u>VOC (lb/hr)</u>
Boiler #1	#4 Fuel Oil	1.26	1.26	3.15	1.89	0.21	0.01
	Distillate Fuel	1.26	1.26	0.01	0.92	0.23	0.02
Boiler #2	#4 Fuel Oil	1.26	1.26	3.15	1.89	0.21	0.01
	Distillate Fuel	1.26	1.26	0.01	0.92	0.23	0.02
Boiler #3	#4 Fuel Oil	0.30	0.30	1.25	0.75	0.08	0.01
	Distillate Fuel	0.30	0.30	0.01	0.36	0.09	0.01

Visible Emissions:

1. Visible emissions from the common stack serving Boilers #1, #2 and #3 (Stack #1) when only one boiler is in operation and is firing #4 fuel oil shall not exceed 30% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period.
2. Visible emissions from the common stack serving Boilers #1, #2 and #3 (Stack #1) when two or more boilers are firing #4 fuel oil either alone or with distillate

fuel shall not exceed 30% opacity on a 6-minute block average, except for no more than three (3) six (6) minute block averages in a 3-hour period.

3. Visible emissions from the common stack serving Boilers #1, #2 and #3 (Stack #1) when the boilers are firing only distillate fuel shall not exceed 20% opacity on a 6-minute block average, except for no more than one (1) six (6) minute block average in a 3-hour period.

SMHC-Sanford shall be limited to a combined 175,000 gallons/year of #4 fuel oil and distillate fuel for Boilers #1, #2, and #3 based on a calendar year.

## 2. Periodic Monitoring

Periodic monitoring for the boilers shall include recordkeeping to document fuel use both on a monthly and calendar year basis. Documentation shall include the quantity, type, and sulfur content of the fuel used.

## 3. 40 CFR Part 63 Subpart JJJJJ

Boilers #1, #2, and #3 are subject to the *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* (40 CFR Part 63 Subpart JJJJJ). The units are considered existing oil boilers.

A summary of the currently applicable federal 40 CFR Part 63 Subpart JJJJJ requirements is listed below. At this time, the Department has not taken delegation of this area source MACT (Maximum Achievable Control Technology) rule promulgated by EPA, however SMHC-Sanford is still subject to the requirements. Notification forms and additional rule information can be found on the following website: <http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

### a. Compliance Dates, Notifications, and Work Practice Requirements

- i. An Initial Notification was submitted to EPA in November of 2014.

### ii. Boiler Tune-Up Program

- (a) A boiler tune-up program should have been implemented to include the initial tune-up of applicable boilers no later than March 21, 2014. [40 CFR Part 63.11223]

1. Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

Boiler Category	Tune-Up Frequency
New or Existing Oil, Biomass and Coal fired boilers that are not designated as "Boilers with less frequent tune up requirements" listed below	Every 2 years
<b><i>New and Existing Oil, Biomass, and Coal fired Boilers with less frequent tune up requirements</i></b>	
With a heat input capacity of <5MMBtu/hr	Every 5 years
Boiler with oxygen trim system which maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune up	Every 5 years

[40 CFR Part 63.11223(a) and Table 2]

2. The tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the concentration of CO in the effluent stream (ppmv) and oxygen in volume percent, measured at high fire or typical operating load, before and after the boiler tune-up, a description of any corrective actions taken as part of the tune-up of the boiler, and the types and amounts of fuels used over the 12 months prior to the tune-up of the boiler. [40 CFR Part 63.11223(b)(6)] The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR Part 63.11225(b)]
- (b) The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:
1. As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr and boilers with oxygen trim systems. [40 CFR Part 63.11223(b)(1)]
  2. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
  3. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired

boilers less than 5 MMBtu/hr and boilers with oxygen trim systems. [40 CFR Part 63.11223(b)(3)]

4. Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
5. Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
6. If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]

- (c) After conducting the initial boiler tune-up, a Notification of Compliance Status should have been submitted to EPA no later than July 19, 2014. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b)]

EPA requires submission of the Notification of Compliance Status reports for tune-ups through their electronic reporting system. [63.1125(a)(4)(vi)]

b. Recordkeeping

Records shall be maintained consistent with the requirements of 40 CFR Part 63 Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]: copies of notifications and reports with supporting compliance documentation; identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned; documentation of fuel type(s) used monthly by each boiler; the occurrence and duration of each malfunction of the boiler; and actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation. Records shall be in a form suitable and readily available for expeditious review.

C. Annual Emissions

1. Total Annual Emissions

Due to the fact that emissions are dependent on the fuel being fired, and SMHC-Sanford wishes to retain licensed capability to fire #4 fuel oil and distillate fuel in the boilers, the facility shall be restricted to the maximum annual emissions from the fuel which yields the highest tons per year quantity for each pollutant. The tons per year of pollutants from #4 fuel oil and distillate fuel combustion were each calculated based on a licensed annual limit of 175,000 gallons/year. Due to these limitations, the highest emissions for PM, PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub> emissions occur when firing #4

fuel oil and the emissions of CO and VOC where the same whether firing #4 fuel oil or distillate fuel.

SMHC-Sanford shall be restricted to the following annual emissions, based on a calendar year:

**Total Licensed Annual Emissions for the Facility**  
**Tons/year**  
(used to calculate the annual license fee)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Boilers #1, #2, #3	2.63	2.63	6.56	3.94	0.44	0.03
Generator #1	0.23	0.23	0.003	6.24	1.66	0.18
Generator #2	0.12	0.12	0.001	2.69	0.58	0.22
Generator #3	0.06	0.06	0.001	2.15	0.46	0.18
Generator #4	0.02	0.02	0.0002	0.65	0.14	0.05
Generator #5	0.01	0.01	0.0002	0.11	0.14	0.05
<b>Total TPY</b>	<b>3.1</b>	<b>3.1</b>	<b>6.6</b>	<b>15.8</b>	<b>3.4</b>	<b>0.7</b>

## 2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21 Prevention of Significant Deterioration of Air Quality rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO<sub>2</sub>e).

Based on the facility's fuel use limit(s), the worst case emission factors from AP-42, IPCC (Intergovernmental Panel on Climate Change), and *Mandatory Greenhouse Gas Reporting*, 40 CFR Part 98, and the global warming potentials contained in 40 CFR Part 98, SMHC-Sanford is below the major source threshold of 100,000 tons of CO<sub>2</sub>e per year. Therefore, no additional licensing requirements are needed to address GHG emissions at this time.

## III.AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a minor source shall be determined by the Department on a case-by case basis. In accordance with 06-096 CMR 115, an ambient air quality impact analysis is not required for a minor source if the total licensed annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

<u>Pollutant</u>	<u>Tons/Year</u>
PM <sub>10</sub>	25
SO <sub>2</sub>	50
NO <sub>x</sub>	50
CO	250

The total licensed annual emissions for SMHC-Sanford are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

### ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-71-71-I-M subject to the conditions found in Air Emission License A-71-71-G-R/M and in the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

### SPECIFIC CONDITIONS

*The following shall replace Condition (16) in License A-71-71-G-R/M.*

#### (16) Boilers #1, #2, and #3

##### A. Fuel

1. Boilers #1, #2, and #3 are licensed to fire #4 fuel oil and distillate fuel.
2. Total combined fuel use for Boilers #1, #2 and #3 shall not exceed 175,000 gallons/year of #4 fuel oil and distillate fuel.
3. The fuel sulfur content for the #4 fuel oil shall be limited to 0.5% sulfur by weight.
4. The fuel sulfur content for the distillate fuel shall be limited to 0.0015% sulfur by weight.



5. Compliance shall be demonstrated by fuel records from the supplier showing the quantity, type, and the percent sulfur of the fuel delivered. Records of annual fuel use shall be kept on a monthly and calendar year basis. [06-096 CMR 115, BPT]

B. Emissions shall not exceed the following:

Units	Pollutant	lb/MMBtu	Origin and Authority
Boiler #1	PM	0.2	06-096 CMR 103, Section (2)(A)(1)
Boiler #2	PM	0.2	06-096 CMR 103, Section (2)(A)(1)

C. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Units	Fuel Type	PM (lb/hr)	PM <sub>10</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	NO <sub>x</sub> (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Boiler #1	#4 Fuel oil	1.26	1.26	3.15	1.89	0.21	0.01
	Distillate fuel	1.26	1.26	0.01	0.92	0.23	0.02
Boiler #2	#4 Fuel Oil	1.26	1.26	3.15	1.89	0.21	0.01
	Distillate fuel	1.26	1.26	0.01	0.92	0.23	0.02
Boiler #3	#4 Fuel Oil	0.30	0.30	1.25	0.75	0.08	0.01
	Distillate fuel	0.30	0.30	0.01	0.36	0.09	0.01

D. Visible Emissions

1. Visible emissions from the common stack serving Boilers #1, #2 and #3 (Stack #1) when only one boiler is in operation and it is firing #4 fuel oil shall not exceed 30% opacity on a 6-minute block average, except for no more than two (2) six (6) minute block averages in a 3-hour period.
2. Visible emissions from the common stack serving Boilers #1, #2 and #3 (Stack #1) when two or more boilers are firing #4 fuel oil either alone or with distillate fuel shall not exceed 30% opacity on a 6-minute block average, except for no more than three (3) six (6) minute block averages in a 3-hour period.
3. Visible emissions from the common stack serving Boilers #1, #2 and #3 (Stack #1) when the boilers are firing only distillate fuel shall not exceed 20% opacity on a 6-minute block average, except for no more than one (1) six (6) minute block average in a 3-hour period.

E. Boiler MACT (40 CFR Part 63, Subpart JJJJJ) Requirements for Boilers #1, #2, and #3 [incorporated under 06-096 CMR 115, BPT]

1. The facility should have implemented a boiler tune-up program to include the initial tune-up of applicable boilers no later than March 21, 2014. [40 CFR Part 63.11223]
  - (a) Each tune-up shall be conducted at a frequency specified by the rule and based on the size, age, and operations of the boiler. See chart below:

Boiler Category	Tune-Up Frequency
New or Existing Oil, Biomass and Coal fired boilers that are not designated as "Boilers with less frequent tune up requirements" listed below	Every 2 years
<b><i>New and Existing Oil, Biomass, and Coal fired Boilers with less frequent tune up requirements</i></b>	
With a heat input capacity of <5MMBtu/hr	Every 5 years
Boiler with oxygen trim system which maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune up	Every 5 years

[40 CFR Part 63.11223(a) and Table 2]

- (b) The tune-up compliance report shall be maintained onsite and, if requested, submitted to EPA. The report shall contain the concentration of CO in the effluent stream (ppmv) and oxygen in volume percent, measured at high fire or typical operating load, before and after the boiler tune-up, a description of any corrective actions taken as part of the tune-up of the boiler, and the types and amounts of fuels used over the 12 months prior to the tune-up of the boiler. [40 CFR Part 63.11223(b)(6)] The compliance report shall also include the company name and address; a compliance statement signed by a responsible official certifying truth, accuracy, and completeness; and a description of any deviations and corrective actions. [40 CFR Part 63.11225(b)]
2. The boiler tune-up program, conducted to demonstrate continuous compliance, shall be performed as specified below:
- (a) As applicable, inspect the burner, and clean or replace any component of the burner as necessary. Delay of the burner inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr and boilers with oxygen trim systems. [40 CFR Part 63.11223(b)(1)]
- (b) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern, consistent with the manufacturer's specifications. [40 CFR Part 63.11223(b)(2)]
- (c) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure it is correctly calibrated and functioning properly. Delay of the inspection until the next scheduled shutdown is permitted; not to exceed 36 months from the previous inspection for boilers greater than 5 MMBtu/hr or 72 months from the previous inspection for oil fired boilers less than 5 MMBtu/hr and boilers with oxygen trim systems. [40 CFR Part 63.11223(b)(3)]

- (d) Optimize total emissions of CO, consistent with manufacturer's specifications. [40 CFR Part 63.11223(b)(4)]
  - (e) Measure the concentration in the effluent stream of CO in parts per million by volume (ppmv), and oxygen in volume percent, before and after adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. [40 CFR Part 63.11223(b)(5)]
  - (f) If a unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of start-up. [40 CFR Part 63.11223(b)(7)]
3. After conducting the initial boiler tune-up, a Notification of Compliance Status should have been submitted to EPA no later than July 19, 2014. [40 CFR Part 63.11225(a)(4) and 40 CFR Part 63.11214(b)]
4. Records shall be maintained consistent with the requirements of 40 CFR Part 63 Subpart JJJJJ including the following [40 CFR Part 63.11225(c)]: copies of notifications and reports with supporting compliance documentation; identification of each boiler, the date of tune-up, procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned; documentation of fuel type(s) used monthly by each boiler; the occurrence and duration of each malfunction of the boiler; and actions taken during periods of malfunction to minimize emissions and actions taken to restore the malfunctioning boiler to its usual manner of operation. Records shall be in a form suitable and readily available for expeditious review.

DONE AND DATED IN AUGUSTA, MAINE THIS 10 DAY OF November, 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Corne for  
PATRICIA W. AHO, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-71-71-G-R/M.**

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 11/07/2014  
Date of application acceptance: 11/07/2014

Date filed with the Board of Environmental Protection:

This Order prepared by Allison M. Hazard, Bureau of Air Quality.

